

IN THE CLAIMS

Please cancel all pending claims (24-32; 35-42; 45-48; and 79-86) and add the following new claims:

87. An apparatus for processing a workpiece, comprising:
- a liquid reservoir for holding a liquid;
 - a dispersion unit within the liquid reservoir;
 - one or more nozzles disposed to spray liquid onto a surface of the workpiece;
 - a liquid path extending between the liquid reservoir and the one or more nozzles, for carrying liquid to the nozzles; and
 - an ozone gas supply system connected into the dispersion unit for introducing ozone into liquid in the reservoir.
88. The apparatus of claim 87 with the ozone gas supply system also connected into the liquid path for injecting ozone into liquid flowing through the liquid path.
89. The apparatus of claim 87 further comprising a mixer in the liquid path.

90. The apparatus of claim 89 wherein the mixer is a static mixer.
91. The apparatus of claim 89 wherein the mixer is an active mixer.
92. The apparatus of claim 87 wherein the liquid includes de-ionized water.
93. The apparatus of claim 87 wherein the liquid comprises sulfuric acid or hydrochloric acid.
94. The apparatus of claim 87 wherein the liquid comprises ammonium hydroxide or an acid hydroxide.
95. The apparatus of claim 87 further including a pump having an input in fluid communication with the liquid reservoir, the pump further having an output connecting into the liquid path leading to the nozzles.

96. An apparatus for treating the surface of a workpiece, comprising:

a liquid reservoir;

a pump having an inlet and an outlet, with the inlet connected to receive liquid from the reservoir;

nozzles disposed below the work-piece and positioned to spray liquid at least partly upwardly onto a bottom surface of the workpiece;

a fluid path extending between the outlet of the pump and the nozzles;

an ozone generator for generating a supply of ozone; and


one or more supplying lines extending from the ozone generator to the fluid path for injecting ozone into the fluid path.

97. The apparatus of claim 96 further comprising a mixer disposed in the fluid path.

98. The apparatus of claim 96 further comprising a rotor for holding and spinning the work-piece while fluid is sprayed onto the workpiece.

99. The apparatus of claim 96 further comprising a process chamber around the nozzles and a recirculation system connected to the process chamber and to the fluid path for recirculating the fluid.

100. The apparatus of claim 87 further including a filter in the liquid path.

 101 The apparatus of claim 87 further comprising a rotor for holding and spinning the workpiece while the liquid is applied to the workpiece.

102. An apparatus processing a workpiece, comprising:

a liquid reservoir for holding a liquid;

a process chamber;

one or more nozzles disposed to spray liquid onto a surface of the workpiece, to form a thin film of liquid thereon;

a liquid path extending between the liquid reservoir and the one or more nozzles, for carrying liquid to the nozzles;